

REMARKS

The drawings were objected to under 37 CFR §1.83(a). The drawings were objected to as failing to comply with CFR §1.84(p)(5). The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. Claims 5, 6, and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Svenson (U.S. Patent No. 2,588,430). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent. Claims 8 and 10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Claims 5, 7, 9 and 12 to 14 have been amended.

Reconsideration of the application based on the following remarks is respectfully requested.

Drawing Objections

The drawings were objected to under 37 CFR §1.83(a). The Office Action asserts the “rotor; rotor slots” recited in claim 5, and the “vane pump, roller pump” recited in claims 5, 7, 9 and 12 to 14, must be shown or the features canceled from the claim.

Rotor 74, rotor slots 72 and vane pump 70 are shown in Figure 7 which was submitted as a new drawing sheet with the preliminary amendment filed with the application. Furthermore, the claims have been amended to remove “roller pump.”

The drawings were objected to as failing to comply with CFR §1.84(p)(5) because they include the following references not mentioned in the description: 70, 72, 74.

References 70, 72 and 74 are mentioned in the amended paragraph [0018] of the Specification. This amended paragraph was submitted with the Preliminary amendment submitted when filing the application.

Withdrawal of the objections to the drawings is respectfully requested.

Specification Objections

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter.

For claim 7 limitation “between 46 to 51 degrees,” proper antecedent basis can be found on page 2, paragraph [0005], lines 1 to 4, for example.

For claim 9 limitation “between 46 and 55 degrees” proper antecedent basis can be found on page 2, paragraph [0005], lines 1 to 6, for example.

For claim 12 limitation “a pressure region...105 degrees” proper antecedent basis can be found on page 6, paragraph [0018], lines 8 to 11, for example.

For claim 13 limitation “points...90 degrees” proper antecedent basis can be found on page 5, paragraph [0017], lines 16 to 17, for example.

Withdrawal of the objection to the specification is respectfully requested.

35 U.S.C. §102 Rejections

Claims 5, 6 and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Svenson (U.S. Patent No. 2,588,430).

Svenson discloses a rotary blade pump having a rotor. “[T]he rotor 68 is provided with a plurality of generally radially disposed slots 106 spaced uniformly along the rotor periphery.” (Col. 4, lines 29 to 32).

Claim 5 has been amended to recite “pump comprising:

a double-stroke delivery contour, the delivery contour having at least one rise zone, at least one large circle region, at least one fall zone, and at least one small circle region, and,

a rotor within the delivery contour, the rotor having radially displaceable vanes in radial rotor slots,

an angular range of the large circle region of the delivery contour being lengthened.”

Svenson fails to teach or show “an angular range of the large circle region of the delivery contour being lengthened,” as recited in claim 5. The Office Action admits that “Svenson fails to disclose a range of the large circle region of the delivery contour of the 1 0 vane pump.” (Office Action page 5). Svenson does not teach a range of the large circle

region, and therefore cannot teach “an angular range of the large circle region of the delivery contour being lengthened.”

Withdrawal of the rejections of claims 1 to 6 under 35 U.S.C. §102(b) is respectfully requested.

With further respect to claim 11, which is dependent on claim 5, claim 11 recites “wherein a length of a suction region is not lengthened.”

Although the Examiner alleges that Svenson discloses this limitation, the Office Action does not cite to any part of Svenson in support of this allegation, in fact, Svenson fails to teach or show the limitation of claim 11.

For this additional reason, withdrawal of the rejection to claim 11 is respectfully requested.

With further respect to claim 12, which is dependent on claim 5, claim 12 has been amended to recite “wherein the pump is a 12 vane pump, and turning points of a displacement contour function in a direction from a suction region to a pressure region are spaced apart by approximately 105 degrees.”

Although the Examiner alleges that Svenson discloses this limitation, the Office Action does not cite to any part of Svenson in support of this allegation, in fact, Svenson fails to teach or show the limitation of claim 12.

For this additional reason, withdrawal of the rejection to claim 12 is respectfully requested.

With further respect to claim 13, which is dependent on claim 5, claim 13 has been amended to recite “wherein the pump is a 10 vane pump, and turning points of a displacement contour function in a direction from a pressure region to a suction region are spaced apart by approximately 90 degrees.”

Although the Examiner alleges that Svenson discloses this limitation, the Office Action does not cite to any part of Svenson in support of this allegation, in fact, Svenson fails to teach or show the limitation of claim 13.

For this additional reason, withdrawal of the rejection to claim 13 is respectfully requested.

With further respect to claim 14, which is dependent on claim 5, claim 14 has been amended to recite “wherein the pump is a 10 vane pump, turning points of a displacement contour function being shifted by approximately 3° in direction of rotation.”

Although the Examiner alleges that Svenson discloses this limitation, the Office Action does not cite to any part of Svenson in support of this allegation, in fact, Svenson fails to teach or show the limitation of claim 14.

For this additional reason, withdrawal of the rejection to claim 14 is respectfully requested.

With further respect to claim 15, which is dependent on claim 5, claim 15 recites “wherein turning points of a displacement contour function are not spaced evenly about the delivery contour.”

Although the Examiner alleges that Svenson discloses this limitation, the Office Action does not cite to any part of Svenson in support of this allegation, in fact, Svenson fails to teach or show the limitation of claim 15.

For this additional reason, withdrawal of the rejection to claim 15 is respectfully requested.

35 U.S.C. §103 Rejections

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent.

Svenson is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to claim 7, which is dependent on claim 5, is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Svenson to include “wherein the pump is a 10 vane pump and the large circle region of the delivery contour on one side extends between 46 and 51 degrees,” as recited in amended

claim 7. The extension of the large circle range is critical to the invention. The long circle region in Svenson seems to start at 70° which is much greater than the 46 to 51 recited in claim 7. This range of the present invention is critical as it shortens the compression region from prior art and lengthens the pressure equalization process. (Specification page 2, paragraph [0005], lines 6 to 9.

For this additional reason, withdrawal of the rejection to claim 7 under 35 U.S.C. §103(a) is respectfully requested.

Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Svenson in view of legal precedent.

Svenson is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to claim 9, which is dependent on claim 5, is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Svenson to include “wherein the pump is a 12 vane pump and the large circle region of the delivery contour on one side extends between 46 and 55 degrees,” as recited in claim 9. The extension of the large circle range is critical to the invention. The long circle region in Svenson seems to start at 70° which is much greater than the 46 to 55 recited in claim 9. This range of the present invention is critical as it shortens the compression region from prior art and lengthens the pressure equalization process. (Specification page 2, paragraph [0005], lines 6 to 9.

For this additional reason, withdrawal of the rejection to claim 9 under 35 U.S.C. §103(a) is respectfully requested.

Allowable Subject Matter

Claims 8 and 10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

In light of the discussion above with respect to claim 5, withdrawal of the objections to claims 8 and 10 is respectfully requested.

CONCLUSION

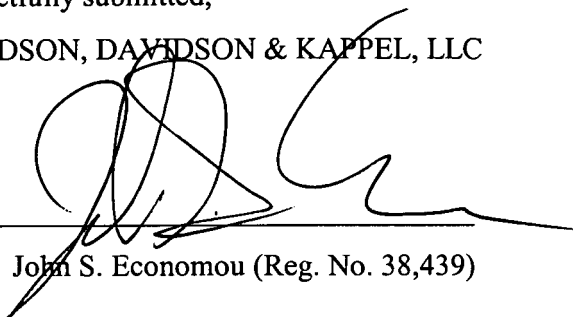
It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,

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